

PRACTICAL  
OBSERVATIONS,

Concerning the CURE of the  
VENEREAL DISEASE

BY

MERCURIALS.

To which is added,

A Letter to PETER COLLINSON, Esq;  
F. R. S.

CONTAINING

An Account of an Ear of Dog's Grass, that  
was swallowed by a Child, and afterwards  
discharged on its Back.

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By JONATHAN WATHEN, Surgeon.

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## INTRODUCTION.

✱✱✱✱ F all the diseases to which the  
✱ O ✱ human body is subject, none  
✱ ✱ ✱ have been more accurately  
studied, or more exactly described, than  
the Lues Venerea. Nor is the world  
less acquainted with that grand  
and important remedy by which it  
has been best cured, from the ear-  
liest to the present time. (I mean  
since its irruption into Europe.) For  
as to what is said to cure it in Africa  
or America, 'tis little to our pur-  
pose, since the influence of climates  
on the human body (so little under-

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flood) renders it necessary to treat the same disorder, in different climates, in a different manner: and I am sufficiently authorized to assert, that the Lues is not to be removed by the same means in North as in South America; and in the last mentioned as on the Guinea coast; and that the most celebrated remedies used by the inhabitants of both Americas, are of such doubtful efficacy, as to be now almost entirely laid aside, since the introduction of mercurials by the English and French surgeons. This medicine has always had, and still continues to have, the suffrage of the most judicious and experienced of our profession, as the principal, if not the only remedy, by which the disease can be cured: And yet, though this has been ge-

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nerally admitted and confirmed by an infinite number of cases, we are still left unacquainted with the nature of that peculiar operation by which mercury produces these astonishing effects. The following sheets contain certain observations and deductions, professedly designed to supply that deficiency. I am very sensible of the impracticability of ascertaining the interior operation, and mechanical effects, of the generality of medicines administered continually in various disorders: but when the success of a remedy has been proved by such frequent experiments, it is surprising that the operations, to which it owes its efficacy, should not be more perfectly understood. As I could not obtain this knowledge from books or conversation,

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versation, I determined to seek it from observation; the only certain method of investigating the powers of nature, and obtaining solid satisfaction. This is not a matter of meer entertainment and speculation, or designed as a subterfuge from the imputation of empiricism, but a matter of the utmost importance and absolute necessity, to every one that administers a mercurial medicine. By this knowledge we are enabled to form a just prognostic of our success, even before our process be terminated; and by a timely suspense prevent the patient's unnecessary sufferings. We can also more readily direct and determine the mercurial operations to certain diseased parts of the body, and cure them without that injury to the whole, which

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which otherwise it is unavoidably exposed to. We can remedy what may be deficient or superfluous, avoid a great variety of accidents, and cure with the greatest certainty ; advantages surely of the utmost consequence ; and otherwise quite unattainable.

The method I took in constructing the ensuing principles was by observing what succeeded the exhibition of mercury in every known form, in a great variety of constitutions and diseases, when it acted with success or otherwise, especially in the Lues Venerea. These I considered as so many experiments, which by their number afforded me an opportunity of drawing conclusions from them with almost the same cer-

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tainty as in mathematical deductions. The cases from whence these conclusions are drawn, are too numerous to be inserted here, nor would the relation of them serve any valuable purpose; for if the following truths will not support themselves, they would not stand more secure upon narratives, *easily* and *often* varied to the design or fancy of the writer: I prefer submitting them to the general experience of the candid and judicious practitioner, from him I fear nothing; and as for others, who are less qualified and less benevolent, I expect not their approbation, 'till they know more on these subjects. Their improvement is my ultimate object; and, if this end is but obtained, I shall think myself rewarded in the amplest manner.

Since



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Since this little piece has been ready for the press, I have had the satisfaction to find some of my principal sentiments confirmed by the author of the *Parallele des differantes methodes de traiter la maladie vénériene*. He acknowledges our ignorance of (and the impossibility of investigating) the nature of the venereal poison.---  
*La nature du virus vénérien est absolument inconnue. C'est un venin trop subtil pour être apperçu & soumis à aucune analyse : il ne peut être considéré que dans ses effets.* He differs from me, or rather is silent, as to the *modus operandi*; but is of the same opinion with respect to the effects of mercury. He asserts the corrosive sublimate to be not only a dangerous medicine, but insufficient  
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for the cure of the Lues; and that though it may in some instances cause the symptoms to disappear, it thereby only diffuses or propagates, but does not expel or eradicate the disease. *La disparition des symptômes vérolique n'est pas un signe certain de guérison. Non seulement cette disparition ne prouvé pas la guérison; mais souvent elle est une cause de plus grand infection, par la répercussion du virus.* He proves that decoctions of the woods, directed by the most skilful practitioner, and urged to the cutaneous excretory pores, so as to produce the most copious, equal, and continued sweats, are insufficient to cure the Lues; he appeals to Jean de Vigo, surgeon to Pope Julius the second; Thierry de Hery, a celebrated surgeon

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geon of Paris; André Schilling, physician to the republic of Strasburgh; and to the late eminent and learned Mr. Astruc, in the instance of two remarkable cases cured by him with mercury, which had before sustained the most severe sweatings by Guayac, under the direction of Boerhaave: he acknowledges however with me, that it may be of use (as well as the other famous woods) as an auxilliary or supplement to mercury; nay that it may possibly cure alone in America, &c.

He animadverts satyrically, but justly enough, on the accounts of the success of the antivenereal liquor, published with so much pomp at Vienna; he alludes to the letters of Van Swieten



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Swieten to Mr. Hundertmarke, professor at Leipfic; to the narratives of Mess. Storck, De Haen, and Locher; and concludes, & *c'est encore, à Vienne où ces miracles s'opéroient. L'heureuse terre! que celle qui a le privilège devoir tant de prodiges, refusés aux mêmes tentatives faites par tout ailleurs avec le même soin.* He as clearly demonstrates that Keyser's pills (notwithstanding the plausible narrative so often published) are not sufficient to cure a confirmed Lues: He accounts for their reputation in France from the interested patronage of the great, who have procured their general use in the army and navy; who give sanction to those surgeons and cases only, by whom and in which this medicine is used; that all others, however superior in  
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real success, are equally discredited and neglected; nay even rewards it seems are given to those who make use of Keyser's pills. He informs us that, according to the analysis of Mess. Piat and Cadet, apothecaries at Paris, Keyser's medicines are nothing more or less than pure quicksilver, so perfectly divided, as to continue separated, by the radical acid of vinegar; and that this division, &c. is performed by a machine invented and constructed by M. de Vaucanson, of the royal academy of sciences, for the use of Mr. Keyser. He asserts with me, that this medicine is more slow, uncertain, and dangerous, than any of the common internal mercurial preparations to be met with in every dispensatory or chymical archive; produces a multitude

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titude of credible witnesses in proof of his assertion; and lastly appeals to the English surgeons, especially Mess. Hawkins and Bromfield, who, after the most candid tryal, have rejected both the solution and Keyser's pills, as not only insufficient, but very injurious. *On feroit un volume assez considerable des observatione très constatées de non guerisons qu'on a recueillies contre le remede du sieur Keyser.* In short, it is impossible that any one mercurial medicine can be sufficient to cure the different degrees of the Lues Venerea: however good or excellent any one of them may be; the proper use of either must be determined by an experimental sagacity: under this direction, the least celebrated remedies may be made to cure; and where this is wanting, the



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the most celebrated not only often fail, but are of bad consequence. It is the same with other disorders and other medicines, as it is with the Lues Venerea and mercury.



P R A C.





P R A C T I C A L  
O B S E R V A T I O N S, &c.

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O B S E R V A T I O N I.

THE effects produced in the human body by the Venereal Disease, are similar to those caused by a subtil and destructive poison; but they differ exceedingly in their symptoms and appearances, from those of any other infection; and are thereby sufficiently known and distinguished.

2. Both the antients and moderns appear to be equally ignorant of the essence wherein this poison consists; and, as it has never

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yet



yet been, so perhaps it never will or can be discovered; for such an experiment is prevented by its being ever envelop'd in a certain portion of gross matter, forming an heterogeneous mass; from which this poison cannot be separated, so as to admit of any demonstration wherein its essence lies; wherefore the inferences, drawn from smell, taste, or the operations of supposed opposite or other fluids upon it, are inconclusive.

3. On this account we reject all theories and hypotheses of the poison's being either of the acid, alkaly, or vermicular kind, as insignificant, and sometimes calculated to do mischief.

4. All we know of this disease, is from its symptoms and appearances; but as these have been accurately described by the ancients, and, in what they vary, by the learned Sydenham, Boerhaave, Astruc, Cockburne, Default, and other modern writers; and as these are well known to every judicious practitioner, I shall not engage in a needless recapitulation of them.

5. Although I reject every hypothesis concerning the essence, &c. of the venereal poison, for want of sufficient demonstration, there are nevertheless certain circumstances and facts relating to it, apparent to every one conversant in this disease, which are of great importance to the right knowledge, management, and cure of it; such as these which follow.

6. The venereal poison has the same essence (whatever it be) which it had at its first irruption into Europe. So that whatever part of the body it now affects, or whatever are its symptoms, from a Gonorrhæa to an Exostosis, it nevertheless still retains its original character: though the phenomena are extremely different, the disease is essentially the same; nor is this peculiar to the Lues Venerea, but the like may be asserted of many other diseases; which, though well known, afford very different, uncommon, and sometimes unaccountable symptoms.

7. It admits of but two proper distinctions or divisions: local and universal. The first

of these constitutes a recent, the latter a chronic lues; but this should be understood with some limitation, as to majus and minus.

8. More particularly. By the former, I mean its appearance and effects in, or upon the part where it was immediately received; as in the urethra, under or upon the præputium, &c. nothing of the poison being yet absorb'd into the body; at least so as to discover itself by any internal symptom, or external visible sign.

9. By the latter (I mean cases), where there are sufficient proofs of its absorption; such as ulcers in the nose, tonsills, exostoses, eruptions on the head and breast, nocturnal pains, &c. where it is evident it could not have appeared, had it not been first within the body.

10. There is yet a kind of middle species, which, for the sake of brevity, and to prevent confusion, may be ranked with the first class (8); as the tumor testis, bubo inguinalis, chordæ of the spongiuous bodies, and  
tunicæ



tunicæ membranosæ, penis, &c. which evidently evince an absorption of the poison, though stopped and retained in parts near those first affected. Such symptoms are in general preceded by, or accompanied with, other recent signs (8); nevertheless the poison sometimes insinuates itself, and causes these effects, without those other local, and external appearances (8). I have, at this time, four such buboes, apparently venereal, under my care,

11. The method by which we discover the locality, or progress, of the venereal poison (8, 9, 10), depends chiefly upon the appearances: the first and third (8---10) are almost always attended with inflammatory symptoms; the second (9) is easily distinguished by what is there said, excepting in those instances where it appears in the form and places peculiar to a recent infection, (8---9) causing cancrs, verrucæ, spurious and real gonorrhæas, &c. These being free from pain, and the usual signs of inflammation peculiar to fresh complaints (8, 10), we may conclude, with some degree of certainty, that they proceed from an old vene-

real taint. Such symptoms frequently disappear of themselves ; and are apt to return, even after the common methods of cure: if such patients have commerce with women, during the temporary discharge or eruption just mentioned, they communicate an infection of a slow, but malignant and destructive nature.

12. Although we can pretty well discover these different stages of the distemper, by a diligent attention to what hath been said, we are nevertheless greatly obliged to the veracity of our patients, by which the most sagacious practitioner may be either rectified or confirmed in his opinion.

13. Of all the medicines ever made use of for the cure of this disease, there is no one that hath obtained a reputation superior, or even equal, to mercury: and though some of eminence in our profession have at all times declaimed against it, it has, notwithstanding, maintained its pre-eminence, and been constantly used by those who have been most experienced and successful in this branch of practice, from the earliest to the  
present

present time : for my own part, I am so entirely convinced of its superior efficacy, to that of any other medicine, as to venture to assert, that the lues venerea, whether recent or chronic, local or universal, (8, 9, 10) was never yet radically cured (at least in Europe) without the use of *argentum vivum*, in some form or other. This sentiment is founded on the histories left us by our ancestors; by the most successful practice of some of our contemporaries; and by all my own experience. Besides, it is well known (however disingenuous it may be) that some who have appeared most conspicuous in opposition to it, have, notwithstanding, had recourse to it in their private practice; and thus discovered their real sentiments.

14. It is therefore of the greatest importance, that the natural and most common effects of this mineral, and its generally received preparations upon the human body be well understood; and that it acts precisely in the same manner on a sound, as on a diseased constitution: of this we have sufficient evidence in the accidents the most healthful mechanics are subject to,



who work with this mineral, as glass-filters, gilders, &c. I was lately sent for to a healthy young woman, in a deep salivation, caused by her assisting her husband in his business, who was a watch-gilder.

15. In order to render it active upon the body (with some degree of certainty) it is necessary first to reduce it from its native mass, into infinitely minute globules imperceptible to the eye, by a medium capable of preserving it in such a state: further, it is requisite that this medium be more or less viscous or tenaceous, as the medicine is intended either for external or internal use; for it is impossible to apply it properly to the absorbent pores in its crude state, and internally in that state it has been found to have little other effect than what is caused by its gravity.

16. The generally-received and common preparations of this medicine now in use, and contained in the London and Edinburgh dispensaries, seem to possess every valuable quality, ever yet known, and perhaps possible

able to be obtained, by any mixture or chymical metamorphosis of it whatsoever.

17. With a little allowance, they may be limited to two classes; as quicksilver divided by any simple medium, to which may be added emetic, cathartic, diuretic, or other substances: or when the same mineral, being reduced by fire to a fume, is again fixed and condensed, or united to mineral or other acid or acrid substances; the first are mild and flow in their proper mercurial operation, in comparison with the latter, which are more violent, precipitate, and unequal; which are therefore usually prescribed in much smaller quantities than the former.

18. I shall consider the effects caused by the exhibition of the milder class, and afterwards those which arise from the more acrimonious.

19. Crude mercury, one part perfectly divided by two parts of hog's lard, is the proportion commonly used for external application, and by which salivations are generally

nerally excited. If two or three drachms of this be well rubbed every night into the skin of an adult and healthy person, the sublingual glands, gums, &c. begin to swell about the third, fourth, or fifth day; and if the process be continued for a few nights longer, a plentiful and lasting ptyalism will commence on the sixth, seventh or eighth day; that is by about twenty-four drachms of the unguentum cæruleum, or eight drachms of argentum vivum, or under.

20. The pilulæ mercuriales of the Edinburgh dispensatory, being one of the least compounded preparations of this mineral that is given inwardly, may serve as an example for all others of a like nature; as the saccharatus, &c. and even for those that are rendered a little purgative by certain admixtures, as the pilulæ mercuriales of the London Pharmacopœia, Bellost's, Keyser's, &c. allowing that the proper effects of the argentum are allay'd in proportion to the purgative, be it more or less. The proportion of quicksilver in the aforesaid preparation, is as one to two: if one of these, weighing twelve grains, be taken every night



night and morning for eight days, and the body is not purged thereby, the gums, &c. will be swelled and tender, about that time; and if they are continued as much longer, and in the same manner, the ptyalism will be frequently raised, sometime within or at the end of that space; that is, by about two drachms of pure divided quicksilver, more or less.

21. Although crude mercury is in itself perfectly void of acrimony, smell, or taste, yet when admitted into the body, it frequently produces tumours, ulcerations, and a copious discharge, upon and from the part it naturally flies to; as the salivary glands, ducts, &c. and the ulcers occasioned thereby, resemble those caused by the venereal poison, more than any others whatsoever; but they generally disappear when the mercury is expelled: on the other hand, it may sometimes be observed, that some persons are copiously salivated by it without those painful effects, or even the foetid smell with which others are afflicted; the causes of so great a difference are perhaps not easily assigned, unless we suppose it de-  
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rives its acrimony in the former case, from its intimate combination with fluids of a more gross, impure, and rancid kind than in the latter.

22. I come now to the more active and chymical class, amongst which the *mercurius dulcis sublimatus* deservedly claims the precedence; not only as the most common, but also as the very best of the species, by whatever name celebrated or dignified; and of all which (with some allowance) it may serve as an example: whatsoever its quantity is, it contains nearly as much *argentum vivum* considerably altered, and acuated (17) by its union with the marine acid, by which its operation upon the body is greatly accelerated, in comparison with what is done by the more simple preparations (19, 20); from whence it is, that this so useful and valuable a medicine should always be given with the greatest caution; since it otherwise exposes the patient to the inconveniencies of a sudden ptyalism, diarrhæa, &c. much more than the former: but, exclusive of accidents, when given from five to ten grains every night, it will generally  
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raise a salivation about the sixth, seventh, or eighth day; at first it operates by stool for two or three days; it next constipates the body; after which the mouth, &c. is soon affected: that is, by somewhat more than one drachm of this medicine.

23. Mercurius corrosivus sublimatus is the most acrimonious of the whole class, and demands our particular attention; since it has of late gained considerable credit as an antivenereal, when given in very small doses, viz. one quarter of a grain night and morning, dissolved in half an ounce of French brandy; in this form a very small quantity of the argentum is exhibited, and that greatly altered by its combination with as much of the marine acid as possible. If the patient persists in the above-mentioned course, even for a long time, and until what he has taken amounts at length to a considerable quantity, it seldom affects his salivary glands, operates by the intestines, or indeed by any other emunctory, in a sensible manner.



24. In what I have said concerning these different preparations, doses, &c. I would be understood to mean their most common and usual effects, or operation, upon one or more particular parts or secretory organs; as the salival glands, intestines, &c. I have mentioned these here, as they are well known, and subject to every one's observation; in order to distinguish them from others less apparent, but of much greater consequence (28). And though I have been as exact as perhaps the subject will admit, I am nevertheless sensible the above estimate is liable to many exceptions, on account of the great difference of constitutions; on some, a large quantity of either produces no such effects, whilst on others the smallest portion operates with violence, and for a long continuance: especially on the salivary glands.

25. All these preparations are essentially the same, nor do any other material qualities belong to them but what are derived from their basis; for it is well known that the substances with which the mercury is incorporated, possess not any similar virtues;  
and

and that the most intense heat alters its form indeed, but does not destroy its innate qualities, and effects upon the body; serving only either to retard or accelerate its operation.

26. Nothing therefore can be more absurd, than a bigoted attachment to any of these in preference to others; we may occasionally make use of them all, by suitably adapting them to our patient's situation, case, &c. for seeing the basis of all is the same, and that they differ in some adventitious qualities only, so when these are duly considered, a just estimate of each may be made, their real properties calculated, and, of consequence, the effects most naturally to be expected. We shall thereby be enabled to limit their number; and, at the same time, reserve to ourselves every advantage that can be derived from the variety with which we are furnished. The bigotry before mentioned is frequently prejudicial to the patient; nor is it less injurious to the practitioner himself, who has often the mortification to find the patient cured by another medicine, after his own has been obstinately repeated in vain; both  
which

which might have been prevented by a more extensive knowledge and more liberal sentiments.

27. Having asserted the superiority of *argentum vivum*, and described the more common preparations of it (used particularly in the cure of the venereal disease) together with the most usual effects it has upon the emunctories of those bodies, into which a considerable quantity of it is received ; I come now to enquire what are the interior effects and operations it generally produces within the body, antecedent to its discharge (24) ; the knowledge of which is of the greatest importance to every one that prescribes mercurials ; but more especially in the venereal disease ; for on these alone its real efficacy depends.

28. When any of the foregoing preparations (the solution excepted, ---23) are given in the quantity and manner described (19, 20, 22), the patient generally complains of pain in his head, back, and limbs, lassitude and lowness of spirits ; we perceive a fullness of his face in general, more especially  
about



about the mouth and under the chin : by inspection we learn, that an enlargement and turgescency of the parotid, submaxillary, sublingual, and other salival glands are the principal cause of this appearance : the gums also and the tongue are more red and spongy than before ; from whence a foul and clammy mouth, a brackish taste, soreness, pain, and difficulty of pronunciation, with a putrid and offensive breath ; nay, the whole body seems apparently distended ; but, at the same time, soft and lax to the touch : from these symptoms (which are properly mercurial) and what follows (29), we infer with some degree of certainty, that almost all parts of the body, whether solid or fluid, are at this time powerfully acted upon by the medicine ; that the bulk and rigidity of the former (bones only excepted) are diminished, whilst the latter are not only increased in quantity thereby, and occupy a larger space, but their natural texture is broken and divided into more minute particles than before ; from whence the general distention before noticed. In short, the whole mass seems to be in a state of dissolution, affording us, as its natural consequence,

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quence, all the symptoms of a true plethora ; which from its excess, demands a speedy evacuation ; and the powers of nature are generally so much exerted upon the occasion, that they usually overcome the elastic and constrictive force, of one or more of the emunctories : from whence the accumulated fluids are discharged, with a kind of violence, and a perseverance, not to be suppressed by medicine.

29. But if there be a deficiency of the *vis vitæ*, or too great a resistance of the excretory ducts, so that the discharge is not obtained that way, the patient's plethora may become an apoplexy ; unless he is relieved by a bleeding at his nose, which frequently happens, or by venesection. If the blood of such a one be examined, we find the serum is usually turbid and muddy, and the cruror without tenacity ; the probe passing through it without the least resistance.

30. At this time, the great quantity of aggregated fluids being as well fitted for, as also necessary to be discharged, nature generally

nerally fixes upon the mouth ; at other times on the intestines, and sometimes the skin or kidneys, (though but rarely) for that purpose. When the evacuation (whatever it is) has taken place, the plethoric symptoms subside ; and, when the evacuation is compleated, the body becomes more thin, pale, and emaciated, than before the reception of the mercury.

31. Since this is the case with respect to the interior operations of quicksilver, when taken in certain quantities, and for some time, and that 'tis by these alone it causes those great changes in the body sometimes necessary, and often effectual, to the cure of the most stubborn diseases ; it is evident, that though we vary the form of this medicine, its genuine qualities must be preserved ; and that the effect of every preparation will always be in proportion to the quantity of mercury, and the tendency of the compound to exalt or weaken its natural efficacy.

32. Suppose now the venereal poison to reside in a body thus affected by the operation



tion of mercury (28), it will, without doubt, be admitted, that it acts thereon as it does on the body in general, be it more or less; of consequence the poison, though before settled in particular places, is removed by the mercurial impulse; agitated, resolved, and fused into the common mass of circulating humours; with which it is expelled the body (30).

33. To a cure, therefore, two things are essentially necessary: the resolution of the less tenacious parts, whether sound or unsound (28); and their entire and complete evacuation (30). I say sound, because we know no way of getting rid of the unsound, but in the aggregate; and as we cannot separate the one from the other. It matters not what is the particular composition, name, or reputation of the medicine; if such be its operation, it cures; if otherwise, it will seldom, if ever succeed.

34. We may now conclude, that mercury has not the property of a specific antidote to the venereal poison; and that it  
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does not act by way of extinction, &c. but of this hereafter. We also learn that it does not cure by a salivation, meerly as such; we have frequently seen a violent and lasting ptyalism, accidentally raised by a small quantity of mercury, without even a temporary good effect on the Lues Venerea: and the same may be affirmed of like mercurial evacuations, by any other emunctory.

35. The cure depends wholly and entirely upon the quantity or quality of the medicine exhibited (19, 20, 22); the resolution effected by it (28), which must be as the disease (7); and the subsequent evacuation (30), which must be as the resolution. In all these as exact a proportion as possible must be observed and applied to the disease, whether it be local or universal; a disregard to this, is the true reason why long courses of mercury, repeated ptyalisms, purgations, emetics, sudorifics, diuretics, &c. so frequently fail.

36. To the last observation, some exceptions must be admitted. The vis vitæ may be incapable of sustaining the necessary mer-

curial operations and changes (28). Or the constitution may be of so peculiar a nature, as not to be impressed or operated upon by the most vigorous mercurials. Or, on the contrary, it may be so instantaneously affected thereby, as to be discharged as suddenly, without operating in an extensive way; of consequence the resolution is deficient, the necessary changes imperfect, and the cure uncertain.

- 37. I come now to show how this medicine, and its operation (27), may be applied and regulated, so as to cure the venereal disease, whether recent and local, or chronic and universal (8, 9, 10.)

38. Is the disorder recent and local? we are obliged to this excellent remedy for its cure: but as an external part only is diseased, there is no necessity for its internal and extensive operation; especially as we can limit and restrict it by art; oblige it to act locally; produce the desired effect, and afterwards discharge it, agreeable to the rules of proportion (35); which are here as necessary to be observed, as when the same  
medicine



medicine is designed to act on the whole frame (28), or where the disease is universal (9).

39. For instance, if half an ounce of the unguentum cæruleum (19) be well rubbed in every morning upon the recent cancrs, verrucæ, chordæ, &c. or as near as possible to the seat of spurious and real gonorrhæas, &c. and persisted in as long as necessary, we usually find that what was hard and callous will be dissolved; pain and inflammation dispersed; and that the ulcers soon dry up, and heal perfectly; all affording us a sensible demonstration of the fusing, dissolving power of mercury, by which these effects are obtained.

40. Thus far I consider its operation as local; it would nevertheless soon become general, was it not checked by an immediate and suitable evacuation.

41. It is, I believe, admitted, that the nearer a discharge is made to the object of derivation, the more effectual it is, and vice versa; the vicinity of the rectum to the diseased

diseased parts, and its suitability to the design, confirm us in the sentiments and practice of those, who have in such cases, even to a proverb, preferred this emunctory--*A vesica ad album tutissima via est.*

42. I have generally observed, that four or five stools a days, are equal to, or sufficient for, the discharge of half an ounce of the unguentum cæruleum (39), together with the fluids dissolved thereby. This course should be continued as regularly as the patient's situation, constitution, &c. will permit, till every symptom disappears; after which it should be repeated a few times, for the greater certainty of cure.

43. The cathartic, by which we procure the aforesaid evacuation, should be taken in the morning, about the same time the friction is administered; when by it's acting speedily on the lower parts of the intestinal tube as a stimulus and derivatory (41), the medicine and dissolved fluids are immediately discharged by the rectum, without permitting either of them time to be absorbed into the circulating mass; the propriety and

reasonableness of this practice is obvious; since they could not be expelled through any other emunctory, without passing first of all through the whole body, and of consequence infecting the whole; from whence it cannot again be eliminated, but by a more severe, and also unnecessary course (71); but this evil, which is not uncommon, may be certainly prevented by attending to what hath been said.

44. This method is, perhaps, more direct, sure, and safe, than any other yet known: but as many have neither opportunity or inc<sup>l</sup>ination for the trouble of frictions, the same thing may be done (though more indirectly) by internal medicines of the same species. Whatever preparation we choose for this purpose, its whole force and operation must be determined as nearly as possible to the affected parts, for the reasons already alledged (43): to prevent these evils, and secure the good effects we propose, the medicine should not be permitted to remain any time within the body; it should be speedily impelled to the rectum, upon which primarily, and upon the neighbouring



bouring parts fecondarily, it will act not only as a stimulus and derivatory (41), but also as a diffolvent, attenuant, &c. as elsewhere shown (37). To infure its falutary operation, a little of the ung. mercuriale fhould be frequently applied to the difeafed parts: twelve or fourteen grains of the pil. mercuriales, or fix or feven grains of mercurius dulcis, are pretty near equal to half an ounce of the unguentum mercuriale in the operation, and confequently require the fame difcharge (42).

45. A larger quantity of mercurials may be adminiftered in this way (42, 44), and longer perfifted in, without affecting the whole body, than is generally ufed for a copious falivation; and the more is taken, and acts, and is difcharged, as mentioned (38), the fpeedier will be the cure. Nevertheless, the quantity, continuance, &c. can never be precifely fixed by any rules, but muft be fometimes varied, on account of the patients fituation, cafe, &c. much therefore muft be left to the furgeon's difcretion.

46. Al-

46. Although the gonorrhæa, which I have included amongst the recent venereal complaints (8, 10), has been, and sometimes may be, entirely cured by the processes just now mentioned (39, 44), we nevertheless find, that after the inflammatory symptoms are removed thereby, an obstinate ill-coloured running is apt to continue; verifying the observation of the experienced Dr. Oldfield, who used to say, "The last drops give more trouble than all the rest." But this being somewhat foreign to the present subject, I shall take another opportunity of treating it more largely.

47. The preceding methods (39, 44) may be continued a month or more, if the case require it, without producing general mercurial symptoms (28): and the cure will, in all probability, be completed in rather less than two thirds of that time.

48. But if an equal proportionable discharge is not secured by the rectum, more especially when the medicine is given internally, a sudden and unexpected ptyalism may chance to happen, causing extreme  
torture

torture to the patient, exposing him to the effects (43), and at least protracting his cure (35, 36): (for the remedy by which alone his disorder is removeable, can now no longer be repeated.) The only chance he has, is by exciting a powerful revulsion at the rectum, which (if he be able to sustain it) is seldom sufficient to reverse the course of the medicine he had before taken.

49. If the mercurial effects (38, 39) do not appear, and the evacuation (42) is neglected, or cannot be obtained by proper medicines, certain symptoms and pains, somewhat resembling those of an internal lues, may arise in the body, meerly owing to the residuum of inactive mercury. And as the disease is seldom, or at least with great difficulty, cured in such habits, so not only a venereal but a mercurial disorder also may, and frequently do, exist at one and the same time. In every view, therefore we see the absolute necessity of proportion (35); which excuses me for once more repeating, that as the intromission is, such should be the local mercurial symptoms



toms and effects ; and as both these are, so should the evacuation be.

50. Before I quit this head, it may not be amiss to remark a circumstance of considerable use in the cure not only of this, but of every other degree of this disease, viz. that when any one preparation is given for some time without procuring a salutary change, another that is more active and stimulative should be exhibited ; by which the former is often excited into action ; as the pil. mercuriales after the unguentum ; the mercurius dulcis after the former ; and so on. The good consequence of this practice has been long experienced in the instance of turbith vomits, &c. where a salivation was intended.

51. I have not entered into a detail concerning the chirurgical treatment of buboes, phymoses, &c. as too well known to render it necessary.

52. Although what is above said is more immediately designed for, and adapted to a recent infection, it may nevertheless be applied

applied, with some latitude, to the management of a more confirmed and universal disorder ; for since there is no other difference but as it is greater or less, and it is but one and the same medicine by which both degrees are curable, it is evident we must proceed upon one and the same principle, in the use of that remedy, and govern ourselves by the same general rules ; from which we no otherwise deviate, but as obliged by the different state, situation, &c. of the disease.

53. We come now to that species, called a confirmed or internal lues (9) ; in the cure of which we are necessarily regulated by the disease : the more pertinaceous, fixed, malignant, and universal this is, by so much the more active, vigorous, constant, and extensive must the operation of this medicine be.

54. It was observed (45), that a larger quantity of mercurials is often required, and may be safely taken in the manner there mentioned, than is necessary to raise a copious salivation, or cure the most deep-seat-

ed lues : because in the former case, it is speedily carried out of the body (43), whilst in the latter it is first of all to act within, and produce certain changes and effects (28), upon which the cure principally depends (31), before they are discharged (30).

55. The principal objects respecting this process are, 1st. Resolution ; if the least particle of the virus remains unresolved into the general mass of circulating fluids, the disorder will again return : it must therefore be continued 'till we are confident that this is perfectly accomplished ; which cannot be 'till some time after every symptom and sign has disappeared.

56. The second is evacuation ; for though the dissolution be ever so compleat, it would be of little consequence with respect to a perfect cure, if the whole be not discharged. As the dissolution is, so must the evacuation be.

57. The internal operation of mercury (28), and the places from whence it usually discharges itself, have been already noticed  
(30) ;



(30); it remains now to be considered, how we may regulate these to the best advantage, in a general lues venerea.

58. The preparations (19, 20, 22) may either of them be used in this process, just as shall be thought most suitable to the patients constitution, case, &c. the smaller the doses and the milder the medicine, the more gentle and gradual the operation.

59. It will not be improper to recapitulate what has been before observed (19, 20, 22) concerning the effects of certain quantities, doses, &c. of the more common preparations; where we find, that about eight drachms or less of crude quicksilver, impelled into the body in as many daily frictions; or two drams of divided argentum vivum, taken in pills of twelve grains each, night and morning; or one drachm of mercurius dulcis in pills from five to ten grains, once a day, will excite in general a three or four weeks plentiful salivation. The last-mentioned will bring it on the quickest; the ung. mercuriale next; and the pilulæ mercuriales slowest of all; whilst  
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the mercurius sublimatus corrosivus dissolved in brandy, as now usually prescribed, will very seldom have this effect, how long soever it is taken (23).

60. If the case be of the worst degree of the lues, as exostoses, caries, &c. it will require a considerable quantity of mercury (35); an entire change, or perfect resolution (28), and a very large evacuation to cure it: for the poison is never more fixed, or difficult to be dislodged, than when attached to, or seated in the bones. The more solid a diseased part is, by so much the greater is the difficulty of separation.

61. I have before observed, that the salivary glands are the most commonly and conspicuously affected by mercurials (30); and that the fluids dissolved by them, as well as the medicine itself, are most naturally and constantly discharged by their excretory ducts. The operations of nature are superior to those of art: from whence it has ever been observed, that the very greatest degrees of malignity, and attachment, in this disease, were never cured by

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any other process and evacuation so certainly as by a large and well conducted salivation.

62. What is of most importance in the raising, conducting, and terminating this course, may be collected from what hath been already said (19, 34, 35, 52, 55, 56, 60), it will nevertheless not be amiss to descend to some particulars; by the observance of which we shall gain considerable advantage.

63. We have more than once observed, that the effects of mercurials on different (and perhaps the same) bodies vary exceedingly. The utmost caution therefore should be exercised where they are prescribed with a view to excite a (salutary) ptyalism; if this comes on before a sufficient quantity of the medicine be taken, it is premature; it will not produce the necessary changes, or prove a radical cure: its operation is partial only; and if we give the patient in this state more of the remedy, it will take the same course, and continue therein till it has exhausted his strength, without reaching,



at least without removing his disorder (35): here, alas, we have no other resource but patience; and must wait till the whole of the medicine is expelled, and the habit restored to some degree of strength; after which we may endeavour to raise a ptyalism more agreeable to the laws of proportion (35). The doses should at first be small, increased daily, and the patient narrowly watched; by this means we shall prevent the afore-mentioned evils; gain some experience of the constitution; secure a retreat, if necessary; and attain to a kind of certainty as to a due proportion respecting the quantity of the remedy. Such incidents as these afford us the most satisfactory reasons, why a second or third salivation succeeds, when the preceding failed; and why some have been cured even by a mercurial alvine discharge, after a severe ptyalism had been raised without success, and vice versa.

64. During the ptyalism, plentiful dilution has been generally recommended, not only as necessary to sustain the patient, but as an auxiliary to the salutary operations of

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mercury; some prescribe it by way of repletion, before the medicine is exhibited; others begin with it at the commencement of the mercurial course; for my part I cannot concur with either of these methods. Upon what is the mercury to act? but upon the old and diseased fluids, &c. For what purpose then is a large quantity of recent and pure liquors infused into the body? but to increase the magnitude of the former, which, of consequence, must require a larger quantity of the medicine to produce those effects, which a smaller would before have done safely and sufficiently. What? but to expose the patient to the danger of a mercurial plethora (28), a dropsy, hydrocephalus, empyema, and other mortal complaints, which I have frequently seen follow from such a practice; nor is this asserted without sufficient evidence; it is founded on the dissection of several morbid subjects, who have died in salivations, amongst the rest, one (very remarkable) was brought under my inspection, in whom all the effects above recited were remarkably apparent: he was, before the mercurial process, athletic, corpulent, and very healthy; having

having nothing but a few cancrs, and a gonorrhæa, for which he was unfortunately salivated. But it will be said, Is no kind of preparation then necessary to precede a mercurial process of this kind? I answer, that body is best fitted for a ptyalism, which is neither impoverished or corpulent; the former may not be able to sustain the needful mercurial operation (28); the latter is subjected to the aforesaid inconveniences: the only preparation required, is to procure a kind of mediocrity; where there is this, nothing else is wanting; where it is wanting, different methods must be pursued: but these things are so obvious, as not to need any explication.

65. The proper time for dilution, is soon after some or most of the mercurial effects or symptoms (28) appear: or just when the saliva begins to flow: 'till then, the patient may be permitted the use of common food and drink, so it be light, mild, easy of digestion, and little in quantity; by this his strength and spirits will be preserved to the period above-mentioned, when the propriety, as well as the patient's capacity for con-

tinuing common food, cease at one and the same time. It is now that the mild and thin drinks, such as are usually prescribed in salivations, must be taken, and persevered in, as frequently and as constantly, as possible; nor do we find it difficult to persuade the patient to comply with this, since a thirst generally begins as soon as dilution becomes necessary. The reasons for this procedure are apparent: the fluids, both the diseased and the sound (33), are now rarified, dissolved, &c. (28), and begin to flow through the salivary ducts with impetuosity; the recent liquors continually received into the body, coming as it were a tergo, accelerate the motions of the former, add to their natural impulse, facilitate their exit, and, at the same time, serve to replenish their loss, by occupying their places: and they should be continued, not only during the ptyalism, but also some time after it ceases; when, if a little of the poison should remain, it will stand a good chance of being evacuated by any of the other emunctories, before it can again fix and settle itself: their form, indeed, may be changed for a sarsaparilla decoction, the good effects of which are well known; never-



nevertheless, for my own part, I am fully persuaded, the reputation it has gained is more owing to the particular time in which it is generally taken, than to any extraordinary virtues it possesses: the reasons for this opinion may be seen more at large in my notes on Boerhaave's lectures, lately published.

66. We have now seen what surprizing changes within the body, and what great evacuations are necessary to cure the worst species of the venereal disease (60), and how these may be obtained even in some whose constitutions are indisposed to (50), or too susceptible of, mercurial impressions (63). I have designedly omitted certain particulars relating to quantity of saliva, length of the course, &c. as impossible to be determined otherwise than by the surgeon's discretion, and the above general rules.

67. Before I conclude this head, I shall indulge myself with one remark more concerning the two opposite dispositions of some bodies with respect to the operation of mercury. In the one, a very small quantity of

this mineral in almost any form is apt to excite a sudden, lasting, and painful salivation : of which we have innumerable instances. Here it is obvious, the medicine flies as it were immediately to the salivary glands, upon which it acts principally, if not wholly, as a sharp, acrimonious stimulus ; exciting them to a large and excessive excretion : now as the stimulus is, so is the excretion, in every glandular part without exception. We need not therefore wonder, that not only saliva, but serum, nay sometimes pure and unchanged blood, is discharged this way, and in this manner ; when this is the case, a constitution may be exhausted of its fluids, emaciated, and even destroyed, without the poison being either dissolved or evacuated. The other is not seemingly affected by mercury at all, whatever is the quantity or preparation taken : it produces no internal symptom, or extraordinary evacuation. I have seen such a one rub in near twenty ounces of unguentum mercuriale, after this take two drachms of mercurius dulcis, next the mercurius calcinatus, solution, &c. successively, in the usual doses, without causing any one mercurial sign

or symptom whatever, either during or after the course. Such habits are very difficult to cure; of the two the latter seems to have the advantage, as the constitution is seldom impaired thereby; and as the same body is, at different times, differently affected by mercurials: such admit of repetitions at proper distances, without that hazard with which the former are attended (63).

68. Having shewn the propriety and necessity of a regular ptyalism, as a cure for the very worst venereal cases (58), I come now to those that are less malignant, or where the bones are exempted; such as venereal scabs, &c. on the surface of the body; ulcerated tonsils, cancrs, &c. from an old venereal infection (9). These and other like cases of an universal lues venerea, differ from the former (60) principally, in that the poison is not so firmly rooted, and, of consequence, is more easily dislodged: how happy then is it for mankind, that, for one case of the former, there are a hundred of the latter; and that the majority are as certainly curable by a more easy and agreeable method, as the former by a ptyalism?

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Here we cannot help admiring the merit and courage of Dr. Default, who first presumed to dissent from the then established and almost universal method of salivation, from which nothing but a gonorrhæa, and hardly that escaped: he had to oppose those who were deeply interested in that lucrative practice, and who were men of singular eminence and learning. He was nevertheless victorious; because his opposition was founded on facts that were indisputable. He subverted their method, and established his own, which, with little variation, has been ever since practised throughout Europe. Notwithstanding so much merit, this author affords us a striking proof, that a solid, and beneficial practice, may be propagated upon very ridiculous principles; witness his vermicular hypothesis: nor does he seem at all more acquainted with the real qualities and operations of mercury, on the body, than those he disputed with.

69. If a patient presents himself for cure, whose symptoms come under the denomination of the less malignant lues (68); that is, if he has no constant nocturnal pains in his bones,  
exostosis,

exostosis, caries, &c. we may assure him of a compleat cure without a salivation, even though he has before sustained one or more of those processes without success; for as the preceding courses must either have exceeded, or been deficient, in some point or other, relative to proportion (35), so by this method the former may be remedied, and the latter superseded.

70. As in this case the poison is less radical, so the mercurial operation is not required to act with so much force and vigour, as when the bones are diseased (60); it must however operate as extensively as the disorder, and produce the necessary changes (28).

71. When we commence this process, it should be with the utmost caution; our doses must be small, and gradually increased till some of the signs or mercurial symptoms just begin to appear (28); as sponginess of the gums, fœtid breath, head-ach, and lassitude of the body: by this course, a considerable quantity of the medicine will be taken, whereby the mercurial operations  
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are only the more certainly and universally, but the more safely excited, without the hazard of a ptyalism, which now we most solicitously avoid. In order to prevent that evil, and at the same time procure all its advantages, we must reverse the course it usually takes, by exciting and keeping up a mercurial diarrhæa, 'till the mercury and dissolved fluids are compleatly discharged; that is, till the aforesaid mercurial effects no longer exist: we are not however to presume upon the patient's security, although the symptoms should disappear by this process, which frequently happens; but repeat it once or more, and that with as little intermission as possible.

72. The same thing may be done more speedily, though not quite so agreeably, by keeping up the mercurial symptoms (69) all the time to such a degree, as is just consistent with mastication and the use of common food: this is a nice point, and obtained by proportioning the intermission, the mercurial operation, and evacuation, so exactly, that one shall not be superior to the other. This is done by an alternate suspension,



pension, diminution, and increase ; as either augments or diminishes. The greater is the quantity of mercury, the more general the mercurial symptoms, and the more plentiful the evacuation, the more speedy and certain will be the cure, and vice versa.

73. In both processes diluents are as necessary as in a ptyalism. They must here also be taken and regulated by the same principles as in that process, that is, just when the mercurial symptoms appear ; at which time the evacuation must commence : the reasons for this proceeding may be seen (65). If these circumstances be disregarded, the whole design will be frustrated, as in the instance of premature or disproportioned salivations ; on the same account, we must moderate and restrain, as far as possible, an accidental mercurial diarrhæa, by suspending the process, and strengthening the bowels, before we resume it again.

74. If the constitution be unsusceptible of mercurial impressions, affording none of the symptoms peculiar to that medicine (67), the cure will at best be tedious and uncertain :

uncertain : all that can be done in such a case is to repeat the medicine in the manner described (50), only taking care to give it such a discharge, that no inconveniences may be sustained from the residuum (49): by this means some have been at length cured.

75. There is one caution more of the greatest importance, not only to the patient, but to the surgeon also ; for we expose both to the greatest hazard and uncertainty, by a disregard to (what is called) the non-naturals. If the patient gets a cold whilst he is taking mercurials, they instantly become irregular in their action. If the appetite be indulged with rich meats, strong and spiritous liquors, &c. to an excess, their action will be destroyed. Other effects, not less prejudicial, arise from immoderate exercise, and passions. If therefore a patient be in such a situation, or of such a disposition as not to admit of a due regulation with respect to these things, it would be highly imprudent in any surgeon to attempt curing him by the minor process (71), though his disease be of the less malignant

lignant species (68): we must (though otherwise unnecessary) have recourse to a salivation: by which he will be rendered absolutely incapable of such irregularities.

76. Thus it is that mercury given in various forms and preparations, differently regulated in its operation and evacuation, becomes not only the most efficacious, sure, and certain remedy, but also the only one capable of curing so malignant, destructive, and obstinate a disease as the lues venerea: no medicine hath yet been discovered whose qualities or operations are at all similar to it. When the disorder is recent and local, it performs its salutary effects with the greatest expedition, and ease to the patient (38). In the species called less malignant, its operations are necessarily more severe (71), but not less sure. In the worst degree of the lues, nothing inferior to its most vigorous, penetrating, and continued force, is sufficient to eradicate it (60); of consequence the patient's sufferings in this course must be far greater than in the others; but, as I have shewn, to be seldom necessary in comparison with them. For this exemp-  
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tion we are entirely obliged to the art or skill of managing the mercurial operations; in which alone the practitioner's merit consists; and is the only secret, into which every other may be resolved. Away then with Arcanas, Nostrums, and curious preparations, &c. they have no value but as containing somewhat of this only remedy for their basis; nor have they any good effects, but what are derived from thence, and as they are regulated in their operation.

77. I am not ignorant that some have, with the same intention, and even with some success, caused the external pores or kidneys to perform the office of evacuants to the dissolved fluids (71); but neither of these are so certainly or safely commended by us as the intestines, which answer our purpose in every respect; and by repeated and successful trials demonstrate, that nature concurs and co-operates with our proceedings this way.

78. It will not be improper here to examine into the merits of the solution called the antivenereal liquor, by the celebrated Van Swieten,

Swieten, and others, in order to distinguish it, in an eminent degree, from every other mercurial preparation. Let us consider with what propriety and success it may be prescribed, in any of the forementioned degrees of the lues venerea. When speaking of this medicine (22), I observed, that a very small quantity only of genuine mercury could be exhibited in that form; it being rendered so acid and acrimonious by its union with the marine acid, as not to be taken in large doses without imminent danger. I have given the solution to a great number of patients in every species of the lues, and continued it from one to three months, agreeable to the dose, form, and regulations, laid down by Van Swieten, as lately published by Dr. Stork, with the Baron's approbation: The effects which I have seen produced by it are these. It usually causes a temporary sickness upon an empty stomach; it increases the appetite in some, in others it destroys it: in general, it neither operates by the mouth, intestines, skin, or kidneys, in a visible or sensible manner. If the antivenereal liquor be taken in a recent gonorrhœa, it increases the inflammatory and

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painful symptoms to the highest degree: it acts in the same manner upon recent cancers, &c. which I observed (11) were generally accompanied with inflammation; a symptom ever aggravated by the solution, excepting in the instance of a swelled testis; which it will remove very expeditiously, increase the running from the urethra, and again bring on a cordee, dysuria, &c. tho' those symptoms had been long absent. In the worst degree of the lues (60), it makes very little alteration, at least it hath no salutary effect; and is wholly excluded by the necessity of salivation. In the less malignant (68), it hath nothing to recommend it, but what arises meerly from accident, or where the patient is more than ordinarily susceptible of mercurial impressions; then indeed I have known it to act in something the same manner, and produce the same effect as other mercurials given in larger quantities; but this is very rare, as I have found by my own experience of the solution. I must acknowledge, however, that by long taking this medicine, I have seen it abate, and sometimes take away, nocturnal pains, lessen



sen exostoses, and remove venereal eruptions, &c. but they generally returned again, to my great mortification and disappointment. The causes of the inefficacy, and ill success of this medicine, may be readily assigned by what hath been said concerning proportion (35). We may with equal justice make the same observations on the mercurius calcinatus, turbith mineral, and other like preparations, that are of so corrosive a nature as to admit of very small doses only, with any degree of safety : or even when the mildest are made use of in very small quantities ; or at distant periods, if they be larger. From hence also we may infer, that the extinctive method, as it is called, cannot be more successful ; and though we admit the reality of those cures said to be wrought by it at Montpellier, Madrid, and in other warm climates, where the pores are open, and the cutaneous evacuations pretty equal ; all this proves not the propriety of such a practice in a colder and more unequal atmosphere. Yet even there, the salutary effects are not produced by extinction, but by the natural resolving powers of mercury, accompanied with a constant cuta-

neous evacuation. Besides, it is well known that the painful and violent symptoms of this disease will even abate speedily of themselves in warm countries, but more especially when assisted by any kind of mercurial preparation: it is also certain, that though they do not continue long extremely bad, they are but seldom perfectly cured; nor is the disease any where so frequently hereditary as in those countries: a circumstance not much to the honour of the extinctive cure.

79. Whatever be the mercurial process determined on, if we would insure success, it must be persevered in till the effect intended is obtained; for if we prosecute it only indeterminately and insufficiently, and then remit 'till after the whole force of it is expended, and so on, we shall never accomplish a cure; for the vis propagationis will never cease acting, so long as the least of the poison remains. The process must be superior to the disease, and the intermission as little as possible.

80. We frequently find some persons whose cases seem to require a ptyalism, in whom the mercury, though it operates in every other respect agreeably to its nature, and our design, will never discharge itself by the salivary glands; it will resist and overcome all means to force it that way, but seems determined to the intestinal tube for its exit. On the other hand, we propose to cure a less malignant case by a mercurial diarrhæa, we use the greatest caution, and take the most vigorous purgatives: it will, nevertheless, sometimes operate by ptyalism; we cannot always overcome the dispositions of nature. In such cases we should not carry our opposition too far; for by concurring with, and following those intimations (where we may) we shall be most successful, let the course be what it will. It is also certain, that though mercury produces all its proper effects within the body, it sometimes seems indifferent to either; here that which is most suitable to the case and situation of the patient, should determine our choice.

81. Whenever a patient applies for cure, whose case is somewhat ambiguous (for



such there are) and who has before undergone one or more mercurial processes, we ought to examine, as nearly as possible, the quantity and quality of the medicine he had before taken; what were the symptoms excited thereby, and the evacuations he sustained (35). Thus, exclusive of the true venereal signs (8, 9), which are sometimes precarious, we may form a pretty just idea of his state (35, 36): if his processes were disproportionate and unequal, his complaints may be wholly venereal, or mixed, arising from the residuum of mercury; or they may be entirely mercurial. The last of these is perhaps more common than is generally supposed; for it is very certain, those who deserve the disease, are very apt to conclude they have it: and it is the interest of empirics, pretenders, and dishonest practitioners, to confirm their opinion. To such, though perfectly free from infection, they generally give some mercurial preparation; of which the poor infatuated patient, anxious for a cure, takes a considerable quantity, and perhaps for a long time: for none are so greedy of medicine, as those who have fancied diseases. Any one may give, but 'tis not every

one that knows how to regulate the operations of mercury. It is therefore no wonder that, in some at least, it should neither operate (39) nor be discharged (65), which of consequence may excite certain symptoms and complaints by its retention in the body ; but, to be sure of this, we must also enquire what were his real signs (6) before the mercurial course, &c.

82. I think what hath been said is sufficient : it almost demonstrates that mercury acts with great power, but at the same time with safety, on the human body, when properly managed ; and that almost all the ill success and accidents attendant on its exhibition arise from want of management. When this knowledge is once obtained, we shall no longer have reason to wish for any other or better remedy than mercury ; we shall be convinced, there is no one capable of curing so desperate a disease ; no one but must also be as injurious (if not more so) to the human body, unless in the most unskilful hands ; in which indeed there is no medicine but will be dangerous.









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PETER COLLINSON, Esq; F. R. S.

G I V I N G

An Account of an Ear of Grafs that was  
swallowed by a Child, and afterwards  
discharged on its Back.







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PETER COLLINSON, Esq; F.R.S.

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I Troubled you some years ago, with a paper concerning deafness, caused by an obstruction of the Eustachian tube; together with an operation for its removal. This you kindly received, and presented to the Royal Society, where it was read; and after having passed the examination of the learned and impartial Dr. Parsons, was by the committee ordered to be printed. Since that time, I have frequently performed the same operation, and sometimes with the most desirable success. Amongst the rest, on a young man who had been totally deaf from his birth in one ear, and who is now by it restored to his perfect hearing. Many  
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of the profession have seen me perform it, and some have had instruments made for performing it in their own practice. I mention this because I know it will give you real pleasure ; and the more especially as it is through your means that so beneficial an operation is likely to become of public utility. As I believe the following surgical case may have usefulness to plead in its behalf, I am sensible that it wants nothing more to recommend it to your favour and protection ; therefore without any farther apology I proceed to relate it.

In the month of September 1755, a child of about three years of age was brought to me, having a swelling on the back about two inches in length, and of the size of the little finger, lying obliquely on the fourth, fifth and sixth true ribs, counting from above downwards ; its upper extremity about an inch distant from the vertebræ of the back, and its inferior about two inches : it was hard to the touch, and without inflammation. I suspected the swelling might be occasioned by some extraneous body ; but could not get any information,  
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through the ignorance of the person who brought her to me. In three or four days after her mother came with her, by whom I was informed that the child, being with her in a field, had swallowed something, by which it was almost strangled, coughing and reaching exceedingly; this was succeeded by a pain at her stomach, the child crying, and laying its hand on the epigastric region: these symptoms were accompanied with a fever, loss of appetite, stinking breath, and at times coughing up of matter, 'till about a fortnight after the accident; when each of these symptoms disappeared, and a tumor became perceptible on her back; in which state she was brought to me. I applied maturing plaisters, cataplasms, &c. so that in a few days, a suppuration was produced; and in which, as soon as an aperture was made, I discovered a preternatural substance lying; and found it to be a spike of the hordeum spurium of Parkinson, pag. 1147, its bearded extremity lying downwards, and its stalk the reverse: this was on Wednesday, Sept. 30, the day three weeks after it had been swallowed by the child. Though this case

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is so very remarkable, yet I must observe there are not wanting instances of a like kind, recorded by practical writers of the best credit, viz. An ear of corn by Mr. Le Beuf, mem. acad. surg. pag. 43. obs. 39. A blade of dog's grass by Mr. Labbath, ibidem, pag. 433. ob. 38. A blade of dog's grass by Mr. Ambrose Paré, lib. 25. cap. 16. An ear of wheat by Ledelius, in bonet. med. sept. lib. 3. de œsophag. offic. Helmontius, Paullinus, the Acta Leipsica, and German Ephemerides, have also related some histories of this nature. In all of which the symptoms, after swallowing, and during the stay of the substances in the body, have the greatest similitude with each other, and with the case above related, except that the patient mentioned by Ledelius, is by him said to have vomited up matter\*. The effects of these symptoms in the expulsion of the extraneous substance, are likewise as constant as the

\* I cannot help doubting the accuracy of this observation, because it not only differs, in this particular, from every other case, but also as, without the nicest attention, the coughing and vomiting up of matter may not be so readily distinguished; for every body knows that a violent coughing frequently excites nausea and vomiting,



symptoms themselves, viz. the discharge of the substance on some part of the circumference of the breast. The only remarkable difference then amongst authors, is concerning the secret tract through which these bodies pass to the circumference of the breast in order to be discharged. Mr. Hevin, author of 17 memoir of the academy of surgery, imagines they pass through the membranes of the œsophagus and pleura into the fat, where they form the abscess; and thinks that all the symptoms may be thus accounted for, with less difficulty, than by supposing the substances to pass through the trachea: I am the more surpris'd at this account, because he himself relates two cases, wherein they were swallowed down the œsophagus without any symptoms succeeding them at all; and since he supposes each received into the same tube, that the one should produce such terrible symptoms, (and those pulmonic) and the others none at all, seems to me quite inexplicable: Mr. Labbath is opinion, they pass through the trachea into the lungs; this is likewise the sentiment of Le Beuf, Paré, Fernelius, and most others. It would be a discovery of some importance

importance that should determine the truth of this controversy; it would not only serve to gratify curiosity, but be of the greatest utility to the practitioner, who would be no longer doubtful, what way to 'take for his patient's benefit. This now I shall attempt in the best manner I am able. It is very observable, that most of the substances that are recorded to have thus made their exit out of the body upon the surface of the thorax, are of a particular structure, being furnished with serræ or denticulæ covering their whole surface, short and pointed, lying on each other disposed in one direction; their root or origin being towards the stalk, and their pointed extremities towards the end of the ears, grass, &c.

1st. These kind of bodies, when inclosed by any soft or moveable part, so as to be in contact, absolutely resist any retrograde motion, because of the situation of their denticulæ.

2dly. On the contrary, an ear of wheat, grass, &c. thus placed, will assume a progressive motion.

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And 3dly. When so situated, their progress will be proportionable to the motion of the circumambient parts.

Each of these facts are easily proved by the following simple experiment. Place an ear of dog's grass, &c. with its stalk foremost, on the arm between the skin and cloaths; if the limb be agitated, it will make a swift progress from thence to the elbow, shoulder &c. if the arm remains inactive, it has no motion at all; and if you attempt to make it pass up the arm by reversing its position, it will be found impossible. The larynx, pharynx, œsophagus, and trachea are lined with a soft membrane; the latter, with its superior extremity the larynx, is always in motion because of respiration, and its aperture or glottis constantly open for the free transmission of the air.—Suppose then an ear of rye, &c. received into the fauces; if its stalk presents itself fairly in the pharynx, or mouth of the œsophagus, it will easily pass down that canal into the stomach, especially if assisted by deglutition: from whence not the least inconvenience arises, as we find instanced in two of the three cases

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related by Mr. Labbath, mem. acad. surg. pag. 433. obs. 38. and in your friend mentioned at the conclusion of this paper; suppose again it makes any stay in the fauces, because entangled or inconveniently placed, either to be discharged out of the mouth, or to pass down the œsophagus; we know very well such a body cannot make a stay in so irritable a part, without producing the most terrible symptoms, viz. coughing, suffocation, &c. these symptoms are constantly known to happen in these cases. Now suffocation must be caused either by an obstruction in, or pressure on, the trachea or its aperture; which is an undeniable proof of the larynx being affected in a most extraordinary manner, which it would not be if the substances were swallowed down the œsophagus by a voluntary deglutition, at which time we hold our breath; but as these bodies are always received into the fauces by accident, the pharynx at that time being entirely passive, and the larynx in a constant state of activity, it therefore appears to me very obvious, 1st, by the action of the surrounding parts; and, 2dly, by the assistance of the inspired air, that it must be

be determined toward the open orifice of the trachea, where the titillation, and irritation of its very sensible membrane, and the difficulty it meets with in passing thro' the narrow glottis, are causes quite sufficient to produce the dreadful symptoms always accompanying these cases. Having passed this streight, they somewhat abate of their violence, the danger here being more pressing than when it has fallen lower in the trachea\*. It then proceeds down that canal, (as mentioned above) and probably enters into one of the larger bronchia; thus continuing its progress till obstructed by the narrowness of the passage, where it begins a suppuration: whence the coughing up of matter, stinking breath, &c. by which, together with the continued action of the lungs and inspired air, it makes itself a passage till it arrives at the circumference of the lungs, which adhering to the pleura (as is common in inflammations of that organ) a continuity is formed, through which, and the intercostal muscles, it proceeds; 'till at length it arrives in the membrana adiposa,

\* Blancard, Bartholine, Skenkius, Tulpius, &c.

under the skin in some part of the surface of the thorax; where, producing an abscess, this extraneous substance is wonderfully discharged. It is objected by Mr. Hevin, acad. surg. pag. 433. that bodies of such a bulk cannot be received into the trachea without producing not only the most terrible symptoms, but death itself: and indeed at first sight one would naturally be of his opinion, because there are facts enough to prove that many substances of a much smaller size have been of the most fatal consequence. Some have caused immediate death, Willis, pharm. rat. par. 2. sect. 1. In others life was preserved by Bronchotomy, Verd. patholog. chirurg. tom. 2. cap. 26. Heister chirurg. par. 2. sect. 3. &c. But when the particular structure of these bodies is considered, together with their laws of progression, the seeming objection vanishes: for though they raise the most terrible symptoms, such as, were they to last, would certainly destroy the patient in a short time; yet since the more violent these symptoms are, the motion of the circumambient parts must be proportionably increased,



increased, so the patient, in consequence, if relieved at all, will be the sooner delivered from danger; whereas other bodies, having no such properties, if not speedily coughed up, or extracted by Bronchotomy, are retained either in the ventricles of the larynx, or the cavity of the trachea, &c. 'till they suffocate the patient.

I shall now subjoin the case of a gentleman well known to you, Sir, who about thirty years since swallowed one half of a large ear of barley, which he was chewing. He first of all found it entangled in his fauces, where it excited the most violent symptoms of coughing, strangulation, &c. 'till at last, with great difficulty, he forced it down the œsophagus, by swallowing large pieces of bread: the violence of his complaint was hereby somewhat abated; when, reflecting upon all that had past, he thought he felt a small part of the ear pass down his wind-pipe, by which his cough was continued, and by degrees increased so as to become exceeding troublesome and dangerous, with a pain about the sixth rib, on the right and  
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anterior side of the breast. He had much advice, and assured the physicians of this last circumstance, to which they gave not the least credit: he thus continued with all the signs of a consumption, frequently coughing up matter till a quarter of a year was expired, when he convinced them of the fact, by spitting up a clot or core of matter, in the middle of which was discovered an aum of barley: two days after an hæmorrhage of his lungs ensued, by which his remaining strength was almost exhausted, having coughed up a gallon of blood; but by medicine, and living almost wholly on milk, he afterwards regained, and has ever since enjoyed, a tolerable state of health, except that he sometimes feels a pain at the above mentioned place on his breast. The bulky part received into the stomach never gave him the least uneasiness; and being wholly attentive to his other complaints, he never examined his excrements about it.

In this case are contained two remarkable circumstances in confirmation of the above theory, viz. A proof that a small part of the  
ear

ear did really pass down the trachea into the lungs, producing symptoms exactly corresponding with the cases above mentioned: and that no bad symptoms follow its being swallowed down the œsophagus.

I am, Sir,

Your much obliged,

Humble Servant,

Devonshire-Square,  
April 23, 1765.

JONATHAN WATHEN.

F I N I S.



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